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# Teaching approach to enhance motor skills for students in primary school

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## Abstract

The purpose of this study was to evaluate the effect of teaching strategy on results obtained in evaluation of skill-related physical fitness (speed, power, stamina, manipulative skill) and motor skills (mini-handball game) with students from primary school. 30 students (22 boys, 8 girls) aged 8-9 years were evaluated at specific tests of skill-related physical fitness and motor skills two times in a scholar year during experiment (i.e. T1, T2). After applying teaching strategy selected, results recorded at final tests showed us the progress was significant  $p < .001$ . Applying the different teaching strategy for skill-related physical fitness and motor skills, lead us to gain a better performance in the final tests.

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**Keywords:** teaching strategy; motor skills; skill-related physical fitness; primary school.

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## 1. Introduction

Human society, in its various stages of development, has been concerned permanently by physical aspect of the community members, by improvement of the physical development and motor ability of the people. Actions in this direction have been undertaken by two instruments by which it could act: physical education - with predominant formative nature - and sport - with nature to exploit the motor skills of people in the form of competition.

Concepts of physical education and sport are found into the vocabulary of all peoples, their meaning generally being the same. But these terms do not cancel some practical activities encountered in early times, activities that

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today are known as disciplines or sports, such as athletics, swimming, equitation, skiing, etc. They have acquired a special status as a result of differentiation and specialization of practice exercises for competitive purposes.

Physical education is an activity deliberately designed and developed mainly to improve the physical development and motor skills of people, depending on the particular age and sex, social integration requirements and specifics of some professions. Physical education has two sides: training and education (Badiu, 2003; Currie, 2013; Griggs, 2012).

The issue of efficient organization of the educational process on discipline "Physical Education" in primary education has been the attention of specialists of all time. Thus, specialists have proven that to achieve durable results and performance, quality of training depends essentially by the need to consciously select the means, methods and training procedures.

It is clear to everyone in the field of education, that the educational institution is, as in any other country, the main factor of culture and civilization of the students who are involved in extensive training process, but also in harmonious physical development. Didactic approach that includes physical education and sports activities in primary education, seeks to contribute into the training and development of school age students.

Based on these objectives, the teaching approach developed as physical education and sport from the first to the last stage of education must pursue specific finalities. The student will have to be convinced of the necessity and usefulness of the practical work that is physical education and be able to have the ability, but mostly the habit, to act for the purpose mentioned (Pill, Penney & Swabey, 2012; Tsangaridou, 2012; Zlate, 2007).

### *1.1. Hypothesis*

The new vision of teaching physical education in primary education reveals innovative aspects on line of contents, aims and training activities of skill-related physical fitness and motor skills whose formative value is undeniable, with all aspects of teaching - learning - evaluation.

Hence, we have established the following hypothesis: if into the physical education lessons from primary school apply a coherent program of development skill-related physical fitness and motor skills of young pupils, based on diversified teaching strategies, then the development of students' skills and skill-related physical fitness will increase.

## **2. Methods**

### *2.1. Group of the study*

The research was conducted in the school year 2013-2014, with a sample of 30 subjects, including 22 boys and 8 girls, students in grade II, at the School No. 13 Galati City. Average student age is 8-9 year.

### *2.2. Research methods*

To verify the working hypothesis we conducted a quasi-experimental research type, with formative role. The research has a formative character, as it intended that the implementation of the program of development of skill-related physical fitness and motor skills of young pupils to improve student performance and streamline physical education class. Quasi-experimental nature of the research is the fact that in our study we used a single target group.

"Paired-Samples T Test" is another research model used for the comparison of two (or more) values measured on the same subjects.

In conducting the statistical analysis we used the SPSS 20 package software.

### *2.3. Evaluation tools*

During our research we used the following assessment tools, which can be found in the National Scholar System for Evaluation, as control samples for skill-related physical fitness and motor skills. These tools have been applied to

both the initial evaluation and the final evaluation. Evaluation tests of motor qualities and skills: shuttle run test 5 x 5 m (speed), two-handed throw down to horizontal target (manipulative skill), standing long jump (strength in legs) and endurance running in uniformly moderate tempo (stamina), isolated techniques from mini sport game (mini-handball).

### 3. Procedure

This phase took place from October 2013 - May 2014 and consisted in implementing development program for skill-related physical fitness and motor skills of young pupils tested in initial evaluation in order to improve the physical education lesson and improve students' performances in the initial stage.

Compared with the structure outlined in the application Guides of curricula, as generally valid for all school disciplines, to physical education is considered that this structure can be improved, thus increasing its functionality and usefulness.

Therefore, this structure was customized, the curriculum learning units focusing on teaching strategies, adapting the methods, means and forms of organization, which correspond to the stage of training of students.

In the lessons with theme of skill-related physical fitness "the speed", we selected those means which developing all the forms of speed. Since the students cannot easily execute speed movements, ability to execute the speed movement increasing gradually. It have been successfully used games and exercises that require prompt motor responses to the sound signals, visual and tactile, as well as covering small distances in a short time.

We took account of the fact that speed exercises should be run frequently and on short duration, periods of effort alternating with intervals by recreation, which provides students the resumption of repetitions in the same regime and with the same capabilities as the previous execution.

In curriculum learning units, this skill-related physical fitness had allocated a total of six classes in semester II, conducted by using the methods, means and forms of organization selected under the program described in Table 1.

Table 1. Model on the design of the unit teaching strategy – speed

Contents	Hours	Teaching Strategies			
		Methods	Exercises	Forms of organization	Materials
Speed of response to sound signals, visual and tactile; execution speed in singular motor actions.	1	Explanation Conversation Practice	Exercises with selective influence, stretching, bending, wheelwrights executed rapidly for 5-10 seconds. Exercises from actions category of front and formations, changes of formations, remakes of formations, changes of positions and directions to direct orders, given by surprise (clap, whistle, lifting arms). Movement games: "Ducks and hunters", "The third runs away", "Beware your legs", "In the mirror".	Frontal In groups In teams	Handball court Whistle Balls Ropes

Throughout the curriculum of learning units in the skill-related physical fitness - "the power", we selected those means which develops dynamic general power (isotonic); segmentar dynamic power and explosive strength of muscle upper and lower limbs. One of the main criteria in selecting the specific means for skill-related physical fitness - power, was that it manifests themselves with various indices by speed and duration, also in movements with different degrees of coordination.

To educate the power we used a series of specific exercises of short duration, with dynamic nature (moderate in terms of effort), exercises with effort static of short duration (on body posture), jumping, hanging mixed and simple, swinging from hanged, climbing, escalations, relay race.

The means used to power development must meet the following characteristics presented in Table 2.

Table 2. Model on the design of the unit teaching strategy – power

Contents	Hours	Teaching Strategies			
		Methods	Exercises	Forms of organization	Materials
Developing dynamic general power	2	Explanation Conversation Demonstration Practice	From supported position, lying down, forward movements by alternative moving of arms; In pairs, a executants from supporting in palms position, with body lying down and legs spread apart, the other supporting him in calves, moving in different directions on distance of 5-8 m; Throwing released with two hands (bottom, top - side) back and forth with different objects or medicine ball; Transmission of objects from hand to hand, with weights ranging from 1-3 kg, with two hands, up, down and sideways; Transporting in group of items (mattress, bench and coffer) or a colleague.	Frontal In groups	Handball court Whistle Balls Gymnastics banks Dumbbells

Manipulative skill is a complex basic motor skill that expresses students' ability to perform motor acts and actions with a high degree of coordination in terms of efficiency and minimum effort. In manipulative skill development, main methodical way is the continuous acquisition of new skills and motor skill in varied fields of activity, through repeated practice in various conditions, as shown in Table 3.

Table 3. Model on the design of the unit teaching strategy - manipulative skill

Contents	Hours	Teaching Strategies			
		Methods	Exercises	Forms of organization	Materials
General manipulative skill	2	Problem solving Explanation Demonstration Conversation Practice	Individual practice of required motor skills: walking, running, throwing, catching, jumping in applicative relays and dynamic games, increasing execution rate; Meandering walk on rows of 4, 5, 6 students bypassing obstacles; Carrying the ball - walking in balance with weights transport.	Frontal Individual In groups	Handball court Whistle Balls Poles

Skill-related physical fitness "the resistance" develops using the motor actions with well-known structure and acquired by students, with a volume to determine a state of tiredness.

The intensity of effort is moderate (2/4) pause between repetitions having to ensure full recovery of effort capacity, progression factors being effort duration. Application of selected teaching strategy is presented in Table 4.

Table 4. Model on the design of the unit teaching strategy – stamina

Contents	Hours	Teaching Strategies			
		Methods	Exercises	Forms of organization	Materials
Efforts of aerobic type	2	Algorithmization Explanation Demonstration Conversation Practice	Making specific exercises of aerobic type: jumping from rope in moderate tempo for 2-3 minutes in two rounds, with a break 30 sec. Running accelerated in place for 15-20 sec. into two rounds, with a break 30 sec. Dynamic game "Crabs and shrimp"	Frontal Individual In groups	Handball court Ropes Marked trail

In primary school students' interest in playing and movement is very high, the results depend on how the teacher is able to better exploit these advantages in training. Mini-handball is an attractive activity of propaganda for children, of guidance in practicing ball game and attracting children for exercises.

Mini-handball content is oriented to game for playful exercises and to achieve the objectives of physical education. It learns through basic techniques of attack and defense and their application under the conditions of bilateral game. Therefore, in the instructive - educational process, we followed a bilateral game development,

behaviour development specific to game, team spirit, fair play, one for all and all for one. Beginning with simple rules, it should allow students to play with the ball. As they progresses, the rules become more stringent.

These technical elements and tactical processes can be easily appropriated by the algorithmization method, along with other selected methods and presented in Table 5.

Table 5. Model on the design of the unit teaching strategy - mini-handball game

Contents	Hours	Teaching Strategies			
		Methods	Exercises	Forms of organization	Materials
Getting used to the ball of handball	2	Algorithmization Explanation Conversation Practice	Specific dynamic games getting used to the ball of handball: travelling ball on rows ball on wave ball through the tunnel ball through rolling shuttle rolled ball after the pole	In groups	Handball court Whistle Balls Poles

#### 4. Results

After initial testing and implementation the design strategy for teaching skill-related physical fitness and skills specific to mini-handball game, we statistically analyzed performance results obtained in the two key points of the research, initial and final testing. Thus, we compared the performances of students in initial and final test shown in Tables 6 and 7.

Table 6. The analysis of the statistical indices in skill-related physical fitness and motor skills – Boys

Evaluation Tools	Testing	Mean	Std. Deviation	df	t	p
Shuttle run test 5 x 5 m ( <i>seconds</i> )	Initial Testing	6.54	.12	21	13.7	.000
	Final Testing	6.27	.13			
Endurance running ( <i>minutes</i> )	Initial Testing	1.70	.24	21	-12.9	.000
	Final Testing	2.15	.11			
Standing long jumps ( <i>meters</i> )	Initial Testing	1.14	.03	21	-21.4	.000
	Final Testing	1.23	.03			
Two-handed throw down to horizontal target ( <i>executions</i> )	Initial Testing	2.00	.75	21	-6.8	.000
	Final Testing	2.77	.42			
Techniques from mini sport game ( <i>techniques</i> )	Initial Testing	1.86	.64	21	-9.5	.000
	Final Testing	3.64	.49			

p<.001

Table 7. The analysis of the statistical indices in skill-related physical fitness and motor skills – Girls

Evaluation Tools	Testing	Mean	Std. Deviation	df	t	p
Shuttle run test 5 x 5 m ( <i>seconds</i> )	Initial Testing	6.81	.08	7	5.91	.000
	Final Testing	6.56	.13			
Endurance running ( <i>minutes</i> )	Initial Testing	1.28	.036	7	-4.07	.000
	Final Testing	1.65	.27			
Standing long jumps ( <i>meters</i> )	Initial Testing	1.08	.013	7	-9.21	.000
	Final Testing	1.15	.031			
Two-handed throw down to horizontal target ( <i>executions</i> )	Initial Testing	1.13	.35	7	-9.00	.000
	Final Testing	2.25	.46			
Techniques from mini sport game ( <i>techniques</i> )	Initial Testing	1.38	.74	7	-5.29	.001
	Final Testing	3.38	.51			

p<.001

## 5. Discussion and Conclusions

After applying the teaching strategy, it can be noticed a remarkable improvement in skill-related physical fitness - speed, as a consequence of the application of selected methods, means and forms of organization; students succeed now more easily to obtain better performance than in the initial stage.

At the level of skill-related physical fitness - stamina, through a well thought out work, taking into account all factors which determine valuing the motor potential of primary school (grade II), were obtained visible performance after applying teaching strategies, they succeeding to raise motor performance (resistance) from baseline.

Using appropriate teaching strategies, we obtained in skill-related physical fitness - power a better performance compared to initial evaluation. This demonstrates that rigorous selection of teaching strategies improves performance.

From the data presented we can assert that there is a difference between the results obtained from the initial and final testing, these results are not accidental, but due to design of teaching strategy selected and applied in physical education classes. Thus we can say that the hypothesis H1 is confirmed, since  $p < .001$ .

According to the results of the initial tests, it was shown that the level of physical training of students of II class is quite low, being the minimum of the scales provided by the national system of verification, both for girls and for boys.

This clearly indicates the limits which it has the instructive-educational process, approached from the perspective of traditional teaching methods and forms of organization, creates preconditions for increasing the results and student performance through the possibility of implementing diversified teaching strategies.

Units of learning programs focused on teaching strategy are performed by students in the structure shown by the methods, means and forms of organization proposed by us, ensuring enough content for multilateral training, which can be enriched and even overcome by the introduction of other strategies aimed the same character, leaving room for continuous improvement, programs being in this way opened, adaptable and therefore constantly evolving.

In the motor skills in primary education it shows no essential differences between boys and girls, but some features need to be considered for improving performance. These features relate to the maturity of the movement, their economy, fluidity, tempo and expressivity. Boys have inclinations towards strength exercises, sometimes hastily made, for defeating, with precise guidance that increases efficiency, while girls prefer expressive movements performed on music, often characterized by lack of economy, but tend to technical accuracy.

This performance cannot be achieved if the teacher fails to combine teaching strategy (selection methods, means, forms of organization and available teaching materials) with the level and skill-related physical fitness of young pupils.

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